The Washington State Board of Education
Governance I Achievement I High School and College Preparation I Math & Science I Effective Workforce

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Math

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1. What is the State Board of Education's (SBE) role in math education?

One of the Board's five Strategic Plan goals is to promote effective strategies to make Washington's students nationally and internationally competitive in math and science. The Board provides system oversight for math and science achievement, and establishes state minimum graduation requirements
The Board also sets the cut scores on the state math assessments that students must attain to meet or exceed state standards.

The 2007 Legislature gave the Board one-time responsibilities in math. The legislature asked the Board to:

- Add a third credit of math to graduation requirements, and to prescribe the content of those credits. (The rule is effective for the graduating class of

2013, students who entered the ninth grade during the 2008-2009 school year)

- Oversee revision of the state's math standards, and to approve their adoption by the Superintendent of Public Instruction.
- Provide official comment and recommendations to the Superintendent of Public Instruction regarding math curricula identified by the Office of Superintendent of Public Instruction (OSPI) that best align with the new math standards. The Board received its consultant's review of the K-8 math curriculum and provided feedback to OSPI in November 2008. OSPI provided its final recommendations for a K-8 curricular menu in December 2008. The Board received its consultant's review on the high school curriculum and provided feedback to OSPI in March 2009. OSPI provided its final recommendations for a high school curricular menu in May 2009. This report, along with its initial findings, is available here.

2. Is a school district required to use one of the Office of Superintendent of Public Instruction-recommended math curricular programs?

   No. Although OSPI and SBE may recommend certain math programs, the local school district is entrusted with choosing the best curriculum for their students.

3. When do three math credits become a graduation requirement?

   At the instigation of the 2007 Legislature, the SBE amended the graduation requirements rule (WAC 180-51-066) to add a third credit of math and prescribe the content of those credits. The rule was adopted in July 2008 and is in effect for the graduating classes of 2013 through 2015 (students who entered the 9th grade on or after July 1, 2009 through June 30, 2012). WAC 180-51-067 applies to the Class of 2016 and beyond (students who entered the 9th grade during the 2012-2013 school year), but makes no changes to the math requirement.

4. What courses must a student in the Class of 2013 take to earn the first two math credits?

   Students must earn one credit in algebra I/integrated math I, and a second credit in geometry/integrated math II, or earn credits in the relevant career and technical education (CTE)-equivalent courses.

5. How are CTE-equivalent courses determined?

   Each local district determines CTE-equivalent courses, and are required to do so by law (RCW 28A.230.097). A sample of CTE credit equivalency policy and procedure is available (pdf). An Equivalency Toolkit can be found here.

6. Can students take two of the required courses at the same time?

   Yes.

7. What courses may students take for the third math credit?

Students may take algebra II, integrated math III, or a rigorous, high school level math course that meets the student's education and career goals identified in the student's high school and beyond plan. Algebra/integrated mathematics I and geometry/integrated mathematics II (or their equivalent CTE courses) form the basis of a student's mathematical experiences. The intent of the third credit is to enrich and build upon those experiences.

8. If students want to take a course other than algebra II or integrated math III for their third math credit, what do they have to do?

    - Choose a course that is based on a career-oriented program of study identified in their high school and beyond plan
    - Meet with a high school representative and their parent/guardian (or designee if a parent or guardian is unavailable) to discuss the student's high school and beyond plan and the requirements for credit bearing two- and four-year college level mathematics courses.
    - Sign a form, along with the high school representative and parent/guardian, to acknowledge that: 1) the meeting was held, 2) the required information was discussed, and 3) the parent/guardian (or designee if a parent or guardian is unavailable) agrees that the course is more appropriate for the student's education and career goals.

9. Will any course work for the third credit of math?

    The State Board of Education intends for the third credit to be a rigorous, high school level math course that will serve the student's education and career goals. Courses in which the majority of the math is at a K-8 level would not qualify for the third credit. Traditional math examples may include, but are not limited to: statistics, discrete math, linear algebra, and mathematical modeling.

10. Would career and technical education (CTE) mathematics courses satisfy the third credit of mathematics?

    Yes. If the majority (51% or more) of the course is rigorous high school level math, the title of the class is immaterial. CTE math examples might include, but are not limited to, OSPI-approved frameworks in: robotics, engineering design I and II, drafting for civil and architectural engineering, construction math, applied mathematics, business economics math, financial literacy, and business statistics.

    CTE model frameworks are available on the CTE pages of the OSPI website.

11. If a student satisfies a math credit with a CTE mathematics course, will they need to earn a second credit in CTE to meet the occupational education graduation requirement?

Students in the Class of 2016 (entering ninth grade in 2012-2013) and beyond, who earn a math graduation requirement credit through a CTE course locally determined to be equivalent to a math course will not be required to earn a second credit in the CTE course subject; the single CTE course meets two graduation requirements (WAC 180-51-067(7)(a)). More information may be found in the Occupational Education Graduation Requirement FAQ.

12. Can physics count as the third credit of math?

Yes. If the majority of the course is high school level math, the title of the class is immaterial. Districts will need to make these determinations locally by clearly identifying the standards and competencies the course represents.

Students will need to earn the minimum state-required credits, as well as any local credits, to satisfy graduation requirements. In other words, if physics counts as the third math credit, the student will still need, under current rules, to earn separately the state-required two credits of science. The "two-for-one" policy for the Class of 2016 and beyond, only applies to CTE courses locally determined to be equivalent to academic course.

13. Can a support class in conjunction with algebra work for the third credit?

No. The support class may count as an elective credit, but it cannot satisfy the third credit of math. Algebra I/integrated mathematics I and geometry/integrated mathematics II or their equivalent CTE courses form the basis of a student's mathematical experiences. The intent of the third credit is to enrich and build upon those experiences.

14. Could a student take algebra I for two years, counting the first credit as algebra I and the second year as a third credit?

No. Students have the flexibility of taking:

- algebra I/integrated mathematics I and geometry/integrated mathematics II concurrently

OR

- geometry/integrated mathematics II and the third credit of math concurrently

However, they do not have the flexibility of taking the first and third credits at the same time. Equivalent CTE courses may be substituted for all of the courses listed above

15. Can students take algebra I for two periods and count it as the first and third credit of math?

No. Students have the flexibility of taking:

- algebra I/integrated mathematics I and geometry/integrated mathematics II concurrently

OR

- geometry/integrated mathematics II and the third credit of math concurrently

However, they do not have the flexibility of taking the first and third credits at the same time. Equivalent CTE courses may be substituted for all of the courses listed above

16. We plan to offer a math class designed for those students who haven't passed one or more of the end-of-course assessments, but have earned the first two credits of math in the designated math or CTE-equivalent classes. Could this class count as the third credit of math?

Yes, this type of class may count as the third credit of math if the following conditions are met:

a. The math class is rigorous, high school level math that helps the students meet his or her education and career goals.
b. The math class is not the same as the original algebra I/integrated math I and/or geometry/integrated II classes.

17. Can students begin earning the three credits with a more advanced math class than algebra I?

Yes. There are two instances that may create the conditions for students to begin earning the three credits with a more advanced math class than algebra I.

1) A student may take algebra I prior to ninth grade but elect not to put the credit on his or her transcript.
2) Based on written district policy, students may enroll in higher level classes that meet their high school and beyond plan; in effect, they "skip over" one or more lower level classes.

In either of the above instances, students will still need to earn three math credits toward high school graduation.

If a student does not earn credit in algebra I/integrated mathematics I (either because of "skipping over" a class or not requesting credit for a class taken prior to ninth grade), the student will need to earn credit in the following courses:

- Geometry/integrated mathematics II, algebra II/integrated mathematics III, and one other math credit based on the student's educational and career goals as expressed in the high school and beyond plan.

If a student does not earn credit in algebra I/integrated mathematics I and geometry/integrated mathematics II (either because of "skipping over" the classes or not requesting credit for classes taken prior to ninth grade), the student will need to earn credit in the following courses:

- Algebra II/integrated mathematics III, and two other math credits based on the student's educational and career goals as expressed in the high school and beyond plan.

Students will still be expected to meet proficiency on the state-mandated end-of-course (EOC) assessments in algebra I/integrated mathematics I and geometry/integrated mathematics II.

18. Which courses have end-of-course math assessments?

Algebra I/integrated mathematics I and geometry/integrated mathematics II have end-of-course assessments required for graduation. Students enrolled in these courses, or their CTE-equivalents, will take the assessments during the last three weeks of the school year. Students in the Class of 2013 and 2014 must meet proficiency on one EOC math assessment; students in the Class of 2015 and beyond must meet proficiency on two EOC math assessments.

19. Do students have to pass the math end-of-course assessments before they attempt the third credit of math?

    No.